REPORT

ON

IMPERIAL BUREAU
18 JUL 1924
OF MYCOLOGY

THE DEPARTMENT

OF

AGRICULTURE,

BARBADOS.

1922-23.

ADVOCATE CO. LTD.,
Printers and Book-binders to the Government of Barbados.

1923.

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REPORT

ON THE

DEPARTMENT OF AGRICULTURE,

BARBADOS,

FOR THE FINANCIAL YEAR 1922-23.

STAFF.

Director of Agriculture	JOHN R. BOVELL, I.S.O.,
Assistant Director	B. A. BOURNE, B.Sc.,
Assistant in charge of Sugar-cane Experiments at Dodds	M. O. PROVERBS
First Field Assistant	C. O. HAYNES
Second Field Assistant	C. B. FOSTER
Chief Clerk	H. O. RAMSEY
Second Clerk	G. D. RAMSEY
Third Clerk	B. A. NICCOLLS

ESTABLISHMENT.

During the year under review, several appointments and acting appointments due to the promotion of some of the staff, to the leave granted to the Director of Agriculture and to members of the Department having to carry out the provisions of the Mosaic Disease (Eradication) Act, were approved of by His Excellency the Governor.

EXPENDITURE.

	£	s	d
Salaries	2,148	8	8½
Incidentals for sugar-cane, cotton and other experiments	421	11	6½
Upkeep of Botanic Station	166	10	2
Fumigation of Plants		...	
Improving the breed of goats in the Island ...	20	16	8
Pay and travelling expenses in connexion with sugar cane experiments	16	17	11
Purchase of apparatus, books, etc.	18	9	8½
Exhibition	89	13	5
	£2,882	8	1½

RECEIPTS.

	£	s	d
Plants in pots	67	0	10
Canes, cotton, cassava, yams etc. grown on lands rented from Waterford plantation	163	3	9
Sundries :—Packing cane plants, tamarinds sold from trees at Pavilion, etc.	40	17	2½
	£271	1	9½

DISTRIBUTION OF PLANTS, CUTTINGS, SEEDS, ETC.

The receipts for the sale of plants, etc. for the year 1922-23 amounted to £271 1s. 9½d, being £170 11s. 5d. in excess of the previous year.

The plants and seeds distributed locally and abroad for the year are as follows :

PLANTS.

Bougainvillaea (Purple)	16 plants.
„ (Cherry red)	42 „
„ (Terracotta)	12 „
Breadfruit	9 „
Cassia grandis	3 „
Cassia javanica	10 „
Casuarina	126 „
Cherry	3 „
Ficus Benjamina	15 „
Fig	4 „
Grape vine	14 „
Lime	5 „
Mango (grafted)	69 „
Miscellaneous	19 „
Palms and Ornamental plants	504 „
Rose	290 „
Sapodilla	2 „
Star Apple	2 „
Sugar Apple	4 „

CUTTINGS, SEEDS, ETC.

Beans and peas	34 pkts.
Cane cuttings (of these 5,352 cuttings were packed in damp powdered charcoal)	6,052 cuttings
Crocus bulbs	100 bulbs.

EXPERIMENTS WITH SUGAR-CANES.

As a separate report is issued dealing with the sugar cane, manurial and other experiments, there is no need to deal much further with the activities of the Department of Agriculture in this report, beyond stating that during the eight years, 1913-15 to 1920-22, the monetary gain obtained by the sugar cane growers in Barbados from the cultivation of the better seedling sugar canes, viz : B H. 10 (12), Ba. 6032 and Ba. 11569 when compared with the White Transparent, has amounted to about $20,000,000.00. The details as to how this amount has been arrived at are given in the "Report on the Sugar-Cane Experiments" conducted in Barbados during the season 1921-1923. That these three seedling sugar canes are also giving good results in some of the other West Indian Islands where small quantities are already being grown, I may mention that arrangements for the shipment next November of three schooner loads of the better varieties from Barbados to one island are now being made, and that smaller quantities have also been already ordered for three other West Indian Colonies.

THE COTTON INDUSTRY.

The experiments for improving the quality and increasing the yield of lint of the varieties of Sea Island cotton grown in the island were continued during the year under review. These experiments, as has already been pointed out, are carried out in two series. In the first series, an effort has been made by the selection of the best formed and most vigorous plants giving heavy yields of good quality lint, to improve the strain of the Sea Island cotton originally obtained from the Sea Islands, but which had deteriorated owing to the want at one time of a suitable assistant for carrying out the work. In the second series, an effort

has also been made in a similar manner to improve the native cotton which, so far, seems to be practically immune to most of the insect pests and fungoid diseases of the cotton plant. The method by which the selection work is carried out has been so often given in previous reports that it is unnecessary to reproduce it here. As has been previously mentioned, with the permission of His Excellency the Governor, the seed of the specially selected strain of Sea Island cotton is now grown annually on the lands of the Government Industrial School and on the Lunatic Asylum Farm so that seed of a good strain might be available to cotton growers for planting purposes. This strain of cotton is now, owing to the fact that seed from plants attacked by the leaf blister mite and other cotton pests is not now retained for planting purposes, however good it might be in other respects, to a great extent free from the leaf blister mite and certain other diseases which at one time injuriously affected the yield, with the exception, of course, of the cotton caterpillar. That a certain amount of success has attended these efforts may be judged from the yields obtained this year from cotton grown from the selected seed, which in spite of the fact that there was prolonged drought has given in a number of instances very satisfactory yields. As it was desirable to know what the yields were, I may mention that I wrote to a number of the growers who purchased seed from this Department for planting purposes, asking them to be so good as to inform me what yields they had obtained, in order that I might be able to judge whether the cotton selection work carried on by the Department was satisfactory, and I received twenty-two replies. From these I find that ten growers on the aggregate of 206½ acres obtained on the average 1,203 lb. of seed cotton per acre. Of these ten, the highest yield was 1,624 lb. per acre on the average from twenty-one acres, and the lowest 1,056 lb. on the average from twenty-five acres. The remaining twelve growers on the aggregate of 234 acres obtained on the average 775 lb. of seed cotton per acre, the lowest yield being one of 515 lb. per acre from eleven acres. Some of the lower yields—and the lowest yield in this case was one of them—were due to the fact that owing to the drought of the previous year, the sugar canes in some instances did not take up nearly all of the manures applied to that crop, the result being that the residual manures caused the cotton plants to assume a very highly vegetative condition which was inimical to heavy bolling, thus causing a diminished yield. That the increased yields obtained of recent years from the improved strains of cotton are having some effect on this industry it may be mentioned that the area under cotton for the season 1922—1923 was 2,767 acres as compared with 1,092 acres for the season 1921—1922 or an increase of 153 per cent.

ALFALFA.

Mention was made in last year's report of an attempt to introduce alfalfa, a plant that gives heavy crops of very valuable fodder. It might now be mentioned that in addition to the plants obtained from Bermuda, seeds of three other varieties were obtained from Dr. Cross, Director of Agriculture of the Argentine, viz., Peruvian, Medanos and Inverniza.

At first all the varieties were grown in the garden at Codrington House until sufficient seed was obtained for planting in small plots at Dodds. The seed germinated well, but as the plots were only small ones the hares ate the plants as fast as they grew, the result being that nothing could be done to ascertain the yield per acre. As, however, the plants at Codrington produced a further lot of seed, an effort is being made to grow the alfalfa again this year.

EXPERIMENTS WITH ECONOMIC COLOCASIEAE.

Experiments were again carried out this year with those varieties of economic Colocasieae which have given the best results in the past. Table I contains the results obtained with the plants of the *Colocasia*, probably varieties of *Colocasia anti-quorum esculentum* and Table II the results obtained with the *Xanthosomas*.

TABLE I.

RESULTS OF EXPERIMENTS WITH ECONOMIC COLOCASIA.

GROWN FROM CORMELS.

Name.	Weight of Corms per acre. lb.		Weight of Cormels per acre. lb.	
	Mean for 5 years (1916-17—1919-20) & 1921-22	1922-23	Mean for 5 years (1916-17—1919-20) & 1921-22	1922-23
White Seal Top ...	1,556 (1)	1,834	4,314	5,384
White Eddoe	1,344 (2)	1,533	4,864	4,899
Dasheen	650 (2)	1,122	1,982	4,250

1. For four years only, as in 1917-18 corms were used for planting purposes, owing to the fact that most of the cormels had rotted by the time the planting season came round.
2. For one year only.

TABLE II.

RESULTS OF EXPERIMENTS WITH ECONOMIC XANTHOSOMAS

Name.	Weight of Corms per acre. lb.		Weight of Cormels per acre. lb.	
	Mean for 5 years (1916-17—1919-20) & 1921-22	1922-23	Mean for 5 years (1916-17—1919-20) & 1921-22	1922-23
Barbados Roasting Eddoe	4,850	5,113	4,975	5,635
Rolliza	4,409	4,229	4,579	4,184

YAMS.

Experiments with yams were continued this year on the lands of the Government Industrial School during the period under review and the results, in spite of the drought, compare favourably in most instances with the average obtained for the past five years.

TABLE III.

RESULTS OF EXPERIMENTS WITH YAMS.

Name.	No. of years under experiment.	Weight per acre, lb.	
		Mean for period under experiment.	1922-23.
Bottle Neck Lisbon	5	12,865	14,404
Red Yam	5	11,451	12,526
Femelle	5	10,609	15,682
Blanche Femelle	5	8,826	12,139
Antigua	5	6,174	7,550
Crop	5	6,047	4,782
White Yam	5	5,693	10,725
Oriental	4	8,862	12,448
Horn	3	5,499	9,254
Buck	2	7,683	10,992

LIVE STOCK.

The effort which is being made to reduce the high infantile mortality among the peasants' children by stationing bucks of improved breeds about the island with a view of improving the milking capabilities of the goats belonging to the peasants is being continued. There were five such goats stationed at the following places, viz:—one each at Seawell, Christ Church; Bayleys, St. Philip, and Bissex Hill, St. Joseph, and two at the Government Industrial School. It is with regret that I have to record the death during the year of the ones at Bayleys and Seawell due practically to old age. As it is time that the older of the two at the Government Industrial School be sent to a different district, the Hon. A. P. Haynes has promised to take it to Bissex Hill while the Hon. R. Haynes has promised to take the one previously stationed at Bissex Hill to Newcastle. In addition to the above, another well-bred buck and two well-bred ewes have been purchased. The former is being kept at Codrington House until he is old enough to be sent to the Lunatic Asylum Farm where the two ewes are being kept.

LOCAL AGRICULTURAL SHOW.

This year's Local Agricultural Show for peasant proprietors, children of the elementary schools and others was held on Wednesday, December 6, at Lancaster plantation, St. James, kindly lent for the purpose by J. H. Wilkinson, Esq. There were 480 prizes offered amounting to £77 11s. 3d. for exhibits of animals, vegetables, fruit, grafted mango plants, etc., and for the performance of various agricultural operations. Four prizes were offered this year to the boys of the elementary schools for the best essay on the cultivation of sugar cane, sweet-potatoes, or Indian corn stating how the land should be prepared, tilled and weeded, as well as, in the case of the sugar cane and sweet potatoes, how the cuttings should be prepared. In the case of the Indian corn, the writer was requested to state how the seeds should be selected and kept from insect pests. "The cultivation of Indian corn" was selected as the one on which the boys should write. The first and second prizes were awarded to boys from St. Joseph Church Boys School, viz. Oswald Walker and Oswald Harper; the third prize to Samuel Griffith, Holy Trinity Boys, and the fourth prize to Lloyd Sandiford, Boscobel Boys. Four prizes were also offered for the first time this year to girls from the elementary schools for the best essay on how to cook "Indian corn coucou," "Fried fish" or "Rice and peas" and what ingredients, if any, should be added. Competitors were required to send a cooked sample of the dish about which they wrote. Coralie Lashley, of St. Patrick's School was the winner of first prize for both essay and cooked sample of coucou and Grace Armstrong, of the same school, Eunice Vaughn, Indian Ground Girls, and Ermine

Alleyne, St. Philip Church Girls, were awarded second, third and fourth prizes respectively for the essay only. As usual, seeds of various vegetables cultivated in Barbados were imported and distributed free of cost to peasants, small proprietors and teachers for the children of the elementary schools. Numerous exhibits were, as usual, sent in from the elementary schools. No fewer than fifty-six prizes were again offered this year in Class VIII for various agricultural operations such as digging cane holes, forking, draining land, making sweet potato beds, etc. The girls, too, were also offered prizes in Class IX for the performance of such agricultural operations as they were able to perform. Dr. E. G. Pilgrim, M. C. P., very kindly offered prizes for the best hats made from native material and it is a pleasure to be able to state that some well made exhibits were sent in. In Class X which is reserved for Head Teachers only, the successful competitors for the best kept school garden were: Mr. E. G. Smithwick, Mt. Hilloby Combined, first prize; Mr. J. R. Bailey, Southborough Boys, second prize; Mr. O. Walcott, St. Joseph's Church Boys, third prize; and Mr. L. T. Gay, Welches Combined, fourth prize. Thanks to the generosity of the Committee of Management of the Agricultural Society and Mr. C. B. Austin, M. C. P., special double prizes were awarded to some of the Head Teachers for Agricultural work performed by the children of their schools Special prizes were also offered for the greatest number of boys from any elementary school entered for agricultural work. The attendance of visitors was, as usual, large

Sir Frederick Clarke, in distributing the prizes, said he was glad to see the Exhibition so well attended, and expressed his pleasure at being present at the Show Speaking about the exhibits, he remarked on the high standard of every item on show, and implored the peasants to take care of their animals and try to make them the best animals possible by giving them good food and treating them with the utmost kindness. When it came to vegetable exhibits, they should prepare the land properly. Care should be taken to properly manure it and the best seed should be selected and planted. Coming to the school exhibits, he must say that he was surprised that day to see what a vast improvement there had been in that section. Such a state of affairs showed that the younger generation was being taught to take an interest in agriculture and to do their best to produce the best possible plants, etc. for these exhibitions. Another excellent feature of the Show was the entry of school children for agricultural work on the spot. No matter whether a man was going to be a small proprietor or whether he was going to be a labourer—and as they all knew in a community like this a certain number of people had to become labourers,—knowledge of agricultural work from the very bottom was certainly of enormous advantage to him. If the young generation were taught the very elements of agricultural work, it stood to reason that if they became possessed of their own plots of land, they would better know how to cultivate them. On the other hand, when a certain number of them were employed as labourers on the plantations, they would also be better equipped to do the work given them. As regards the elementary school teachers, they were to be congratulated,—those who supervised the growing of the exhibits, and those who taught the children agricultural work,—on the splendid results seen that day. He would not keep them any longer as it became dark very early on these evenings but proceed to distribute the prizes.

The Acting Director of Agriculture begged to thank Sir Frederick Clarke who took a keen interest in agricultural work for being so good as to attend the Show and distribute the prizes. He (the speaker) was particularly interested that afternoon in the exhibits and also in the remarkable success attendant on the interest taken in agricultural work. He had much to be thankful for to Mr. C. B. Austin and to the Barbados General Agricultural Society for the assistance so readily rendered. They had together assisted by contributing something like $72.00 for distribution at that Show. He then called for three cheers for Sir Frederick Clarke.

Rev. J. B. Nichols, Inspector of Schools, said that these Exhibitions which, he thought, were started somewhere about 1899, set two ideals before them. First of all, they inspired in the teacher and school children as well as the peasant, how to select and grow vegetables. Well, when they set their ideals before them they did not always reach them, but at any rate some good had

been done because the ideal had been set if even it was not attained. He did think that these exhibitions every year had done some good. They inspired the spirit of competition among the peasants to grow good articles.

Mr. Martin Haynes, of Ridgeway plantation, called for three cheers for Mr. and Mrs. Mandeville and for all of the ladies who helped at the Exhibition. He also would like to mention that they were all very grateful to Mr. Bourne and his staff for the excellent manner in which they conducted the proceedings in the absence of Mr. Bovell, the Director of Agriculture.

INSPECTION AND FUMIGATION of SEEDS, PLANTS, ETC.

For the year ending March 31st, 1923, 128 consignments of plants and seeds other than cotton seed were examined. Of these, seven packages of growing plants and cuttings had to be fumigated or disinfected, and four packages of plants and seventeen cane cuttings had to be destroyed. During the year twenty-five consignments of cotton seed amounting to 23,108 bags were fumigated.

INSECT PESTS AND FUNGOID DISEASES, ETC.

An account was given in the report last year of the discovery of the mosaic disease of the sugar cane and what had been done in connection with the matter until the end of the financial year, March, 31, 1922. From then on inspections were continued until May 31 which under the Mosaic Disease (Eradication) Act 1921 (1921–39) ended the 1922 season. Under this Act, no owner or occupier can be required to dig up or destroy attacked sugar canes after the 31st of May. For the season 1922—23 work was started on August 14, 1922 and was continued until May 31, 1923. During this period the Inspector paid 220 visits to sugar estates and 485 to peasants' holdings. Of the 220 estates visited 57 or 25·9 per cent. were infected by the mosaic disease and of the 485 peasants' holdings visited 258 or 53·2 per cent. were infected. As it may be of interest it may be mentioned that for the previous season inspections were carried on from January 11 to May 31, 1922 during which period visits were paid to 176 estates and 148 peasants' holdings and of the former 94 or 53·4 per cent. and of the latter, 78 or 52·7 per cent. were found to be infected. It will thus be seen that although there has been a considerable reduction in the percentage of infections found on the estates, the percentage of infections found on peasants' holdings was practically the same.

Attention has also been given during the year to the root borer (*Diaprepes abbreviatus*, Linn) and the brown hardback (*Lachnosterna smithi*, Arrow) which are at present doing so much injury to the sugar crops of the island. An experiment was carried on by the Assistant Director of Agriculture when acting as Director on an estate with paradichlorobenzene where twelve acres of sugar canes were practically killed by the root borer but apparently without any effect.

REPORT OF THE ASSISTANT DIRECTOR OF AGRICULTURE ON THE ENTOMOLOGICAL AND MYCOLOGICAL WORK CARRIED OUT DURING THE PERIOD UNDER REVIEW.

During the first quarter of the period the writer was engaged mainly in research on the problem of sugar cane root disease. A special paper on this subject was subsequently forwarded to the Government in August 1922 and was published in due course. As regards the remainder of the period, the writer acted as Director of Agriculture on two occasions, i.e. from April 27 to May 10 and from September 29, 1922 to May 14, 1923. Owing to the large amount of administrative work which was conducted during the period that the Director of Agriculture was absent on leave, little time was available for the usual detailed investigational work.

The work with insect pests and fungoid diseases, etc., other than that done on sugar cane root disease is summarized under the following headings :—

(1) Inspection of imported plants and seeds and the fumigation of cotton seed.

(2) Upkeep of collections.

(3) Investigation of insect and fungoid attacks reported or observed.

INSPECTION OF IMPORTED PLANTS AND SEEDS AND THE FUMIGATION OF COTTON SEED.

The usual restrictions for the prevention of the introduction of foreign pests and diseases of plants were enforced during the period under review. One hundred and twenty-eight consignments of plants, seeds, etc., were inspected and eleven packages of growing plants and cuttings had to be fumigated or disinfected, while four packages of plants and seventeen cane cuttings had to be destroyed.

Twenty-five consignments of cotton seed amounting to 23,108 bags, imported for the extraction of oil, were fumigated with sulphur dioxide in the holds of the various vessels by means of pots and pans. In addition, thorough inspections were made of these cargoes of cotton seed before admission of the same was allowed.

INSECT ATTACKS REPORTED OR OBSERVED.

SUGAR-CANE.

The root-borer *Diaprepes abbreviatus*, Linn, and the brown hardback *Lachnosterna smithi*, Arrow, were observed to cause considerable loss in certain districts. There can be no doubt that most of this damage could have been avoided by having a proper crop rotation. An opportunity was afforded to conduct an experiment with the soil fumigant carbon bisulphide in a heavily infested field. The experiment was conducted in duplicate and one ounce and one-half ounce injections used. The injections were made six inches below the surface in the centre of each stool. Three weeks subsequent to the application of the soil fumigant the holes were dug up and examined. The results are shown in the table below.

Amount of carbon bisulphide per stool.	Average number of grubs per stool three weeks after application.
0·5 ounce	10·0
1·0 ounce	5·2
0·0 ounce	11 8

From the results of the experiment the writer is of the opinion that the cost of the treatment would be rather prohibitive with the cost of this chemical around 32 cents per lb landed in Barbados. Further experiments are desirable before definite conclusions can be arrived at, however, as the distribution of the fumigant in various parts of the stool instead of being applied in the centre may prove much more effective, although the expense of application would be increased accordingly.

An importation of the chemical paradichlorobenzene will shortly be made also with a view of experimenting with it as a soil fumigant under our conditions.

The moth borer *Diatraea saccharalis*, Fabr. was prevalent in many districts as usual during the year. As pointed out last year, the egg parasite *Trichogramma minutum*, Riley, is often unable to cope with this pest under the existing conditions

and the black parasite of the eggs which appears to be identical with *Prophanurus alecto*, Crawford, is often even less efficient than the former parasite, seeing that it often neglects to oviposit in every egg in the cluster. The necessity for other parasites of this serious pest is becoming more and more apparent and an effort was made quite recently to introduce certain larval parasites from Demerara including *Iphiaulax medianus*, Cameron, and *Iphiaulax* sp. The thanks of the Department are due to Mr. Harold E. Box, Entomologist of Davson Estates, Ltd., Berbice, Demerara, for his very kind offer to assist in introducing the above parasites, a shipment of which has already been received. It is too early yet to predict whether the parasites have become established in the Island, but every effort has been made to make this possible. The introduction of the above parasites should, judging by their reported usefulness in keeping the moth borer in check in Demerara, save many thousand pounds annually to our planters in the near future. . . . .

MISCELLANEOUS TREES, PLANTS, ETC.

The most important infestations noted were *Malpighia glabra* (Cherry), which was seriously affected with the scale *Pulvinaria pyriformis* and the Croton bug *Orthezia praelonga*, Dougl.; Thrinax sp. which suffered from an attack by the scales *Aspidiotus destructor*, Sign. and *Chrysomphalus aonidum*, Linn. and *Gossypium* spp. whose stems were sometimes covered with the scale *Diaspis amygdali*.

FUNGOID ATTACKS REPORTED OR OBSERVED.

Beet. (*Beta vulgaris*, L.) Investigations were conducted in connexion with a seedling disease of these plants. Some fifty per cent of the young seedlings were reported to have "damped off" shortly after germination. The fungus was isolated in pure culture and identified as a species of *Peronospora* by a study of the method of oöspore formation and characteristics of the non-septate mycelium. Stevens records *Peronospora schachtii*, Fcl. as causing a fatal seedling disease of beets in Europe, but no description of the fungus is given.

Egg-plant. (*Solanum melongena*, L.) An instance was recorded in which a vegetable grower lost many of his fruit through some disease which caused them to rot from the stem end before maturity. Disease was found to be due to the fungus *Phomopsis vexans*, (Sacc & Wint) Hart, fructifications of which developed on diseased fruit. The pycnospores measured 5 – 8 × 2 – 2·5 microns.

Guava. (*Psidium guajava*, L.) A disease of the fruit of this tree was observed to cause almost a complete loss. Before the fruit reached complete ripeness they began to show indications of rot from the blossom-end. Microscopic examination of the internal tissue of diseased fruit showed a fungus mycelium to be present which caused the cells to disintegrate. Damp chamber cultures of the fruit produced abundant fructifications of what appeared to be a species of *Gloeosporium*. Spores granular, yellowish, 10·8 – 21·6 × 5·4 – 6·8 microns. The fungus is probably identical with *Glomerella psidii*, (Del) Shel. but pure culture studies have not yet been completed.

It was recommended that affected trees be sprayed with Bordeaux mixture, about every three weeks subsequent to the setting of the fruit. All diseased fruit should be collected and burned. . . . .

Sour Grass. (*Andropogon intermedius, var acidulus*, Stapf.) Toward the end of October many smutted heads of this grass were observed in various localities. The disease occurred on plants which had recently been cut off, the young succulent growth being hardly more than one foot in height. A small undetermined black beetle was also found associated with smutted heads. The fungus produced spherical spores mostly 8·0 microns in diameter and smooth. Germination tests of the spores showed them to be typical of the genus *Ustilago*.

B. A. BOURNE,

Assistant Director of Agriculture

INFORMATION ON VARIOUS AGRICULTURAL MATTERS SUPPLIED TO THE PRESS.

Through the courtesy of the Editors of some of the local newspapers who, so far, have been always willing to render any assistance they can in these matters, the following subjects were brought to the notice of agriculturists :—

On November 10, 1922, publishing a summary and extract from the Report of the Sugar-cane Experiments carried on by the Department of Agriculture for the season 1920-1922.

On January 23, 1923, inviting applications for young trees grown at the Department of Agriculture for planting on Arbor Day and stating the conditions governing their distribution.

On February 1, informing the public that the Acting Director of Agriculture was willing to import onion seed from Teneriffe for those persons desirous of obtaining it for planting purposes.

SUGAR AND MOLASSES CROPS.

According to the Customs Returns, the exported sugar and molasses crops of 1922 were 29,876·5 tons of vacuum pan crystals, 3,946·1 tons of muscovado sugar and 7,390,409 wine gallons of molasses, equal at 110 gallons per puncheon, to 67,186 puncheons of molasses of all grades of the total value of £899,658 made up as follows :—

White Crystal sugar	·70	tons valued at	£	14
Yellow „ „	12·00	„ „ „		192
Dark „ „	29,863·55	„ „ „		447,947
Muscovado „	3,946·10	„ „ „		55,245
	33,822·35			£503,398
Fancy Molasses	6,555,749	gallons „		382,419
Choice „	823,521	„ „ „		13,725
Vacuum Pan „	11,139	„ „ „		116
	7,390,409			£899,658

Fancy molasses is concentrated cane juice from which most of the impurities have been removed, but owing to the impossibility in the ordinary muscovado sugar factories of concentrating each tayche or panful of fancy molasses to the same density it is difficult to say how many gallons of this molasses are equivalent to a ton of muscovado sugar However, from data obtained from various sources it would appear that 380 wine gallons of fancy molasses at 41° Beaumé are equivalent to one ton (2,240 lb) of centrifugal muscovado sugar and 115 wine gallons of choice molasses. At this rate, the fancy molasses manufactured in 1922 is equivalent to 17,252 tons of sugar. The total sugar crop, therefore, if no fancy molasses had been made, would have been 51,074 tons, i.e. 15,069 tons more than the previous year. The above does not include the sugar consumed in the island, which is estimated to be about 8,000 tons.

COTTON CROPS.

For the "Cotton Year" i.e. from October 1921 to September 30, 1922, there were exported from 1,092 acres 362 bales of lint, weighing 200,104 lb, of the value of £17,596. 5s. 10d. There were also exported six bales of linters weighing 1,446 lb. of the estimated value of £150. 12s. 0d. In addition, there were 492,297 lb. of seed, of the estimated value of £1,831 all of which was, with the exception of that used for planting purposes, manufactured locally into oil and undecorticated cotton seed meal. The total value of the cotton industry for the season 1921–22 was therefore £19,577 17s. 10d. It may be mentioned that for the previous year there were 1,564 acres of cotton which yielded 183 bales of lint weighing 88,416 lb. of the estimated value of £14,242.

METEOROLOGY.

The following are summaries of the observations recorded at the Government Meteorological Station for the year 1922, the details of which are given in Appendix 1.

Barometric Pressure. During 1922 the mean pressure, corrected for temperature and gravity and reduced to sea-level, was at 9 a.m. 29·981 and at 3 p.m. 29·906 inches; the highest recorded being 30·093 inches on April 9, and the lowest 29·753 inches on November 18. For the ten years 1912—1921 the average barometric pressure was at 9 a.m. 29·950 inches and at 3 p.m. 29·882 inches. The highest pressure at 9 a.m. during the ten years was on August 19, 1919, when it was 30·112 inches, and the lowest at 3 p.m. on April 14, 1915 when it was 29·669.

Temperature. The mean maximum temperature for the year 1922 was 84·3°F. and the mean minimum 72·8°F. The maximum extreme for the year, which was 88·3°F. was registered on August 10, 12, and 17 and the minimum extreme which was 63·8°F. was registered on January 8. The mean average temperature was 78·6°F., the highest monthly range for the year was 20·3°F. and the lowest was 16·1°F., the mean monthly range being 18·1°F. For the ten years 1912—1921 the average maximum temperature was 84·6°F. and the average minimum 73·7°F. The average maximum extreme during the ten years was 87·0°F., and the average minimum extreme 68·4°F.; the average mean temperature was 79·2°F. and the average range 18·6°F. During the ten years the maximum extreme was 91·1°F. on August 24, 1919 and the minimum extreme 61·8°F. on March 28, 1917.

Tension of Vapour and Relative Humidity. The mean tension of vapour for the year 1922 was at 9 a.m. ·699 and at 3 p.m. ·677. For the ten years 1912—1921 the average tension of vapour was at 9 a.m ·705 and at 3 p.m. ·693. The mean relative humidity for the year 1922 was at 9 a.m 67 and at 3 p.m. 64. For the ten years 1912—1921 the average relative humidity was at 9 a.m. 66 and at 3 p.m. 63.

Wind. The mean daily velocity of the wind during 1922 was 13·0 miles per hour, the maximum being 31·7 miles per hour on January 25, and the minimum 3·5 miles per hour on January 10. The average velocity for the ten years ended 1921 was 12·1 miles per hour.

Rainfall. The rainfall measured at the Government Meteorological Station during 1922 amounted to 40·64 inches. This fell on 159 days, the greatest fall being 3·05 inches on October 12, and the lowest ·01 of an inch on March 11, May 21, June 14, 22, 28, July 22, and August 3. For the ten years 1912-1921 the average rainfall was 44·02 inches and the average number of days on which rain fell was 178.

Rainfall of the Island. The total mean rainfall for the year 1922 from 119 stations was 54·55 inches which fell on 157 days and was 6·71 inches below the average for the sixty years ended December 31, 1921, which was 61·26 inches. The details with respect to the number of days on which rain fell at each of the stations during each month of the year, the total rainfall for each month, and in a number of instances, the height of the rain guage above sea-level are given in Appendix II.

JOHN R. BOVELL,

Director of Agriculture.

APPENDIX I.

METEOROLOGICAL REPORT FOR 1922.

DEPARTMENT OF AGRICULTURE, BARBADOS.

HEIGHT ABOVE SEA-LEVEL 181 FEET.

Months.	Barometric Pressure reduced to sea-level, 32° Fahrenheit, and corrected for gravity.					Temperatures.									Tension of Vapour.			Relative Humidity.			Wind.	Rainfall.	No. of days on which rain fell.
	9 a.m.	3 p.m.	Mean.	Highest.	Lowest.	Maximum Mean.	Minimum Mean.	Maximum Extreme.	Minimum Extreme.	Maximum blackened bulb 4 feet from ground in vacuo.	Mean for month.	Range for month.	Dew Point 9 a.m.	Dew Point 3 p.m.	9 a.m.	3 p.m.	Mean.	9 a.m.	3 p.m.	Mean.	Velocity, miles per hour.		
January ...	29·970	29·890	29·930	30·041	29·842	82·6	70·5	84·1	66·8	149·1	76·6	20·3	67·2	66·7	·672	·651	·663	67·8	63·7	65·8	12·7	2·60	13
February ..	30·003	29·920	29·962	30·063	29·868	82·	7·5	83·3	68·6	153·0	77·0	17·7	67·9	66·2	·683	·644	·664	71·5	63·6	67·6	13·6	3·56	18
March ..	30·013	29·931	29·972	30·071	29·876	83·0	70·4	85·5	66·2	153·6	76·7	19·3	65·1	64·8	·629	·616	·618	61·9	60·3	61·1	14·2	3·34	13
April ..	30·032	29·960	29·996	30·093	29·901	84·1	72·4	86·1	68·6	149·2	78·3	17·5	66·2	65·4	·647	·627	·637	62·9	59·1	61·0	13·6	·51	8
May .	29·991	29·921	29·956	30·032	29·854	85·9	73·7	87·1	70·4	151·1	79·8	16·7	67·1	66·0	·663	·644	·654	61·2	57·1	59·2	15·2	·60	4
June .	29·991	29·933	29·962	30·071	29·882	85·1	74·6	87·7	70·6	147·1	79·9	17·1	68·4	67·6	·695	·679	·687	64·0	61·3	62·7	16·2	4·40	13
July ..	30·027	29·968	29·998	30·085	29·887	85·5	74·3	87·7	70·4	150·9	79·9	17·2	69·3	68·6	·717	·705	·711	66·4	62·3	64·4	14·8	2·75	16
August	29·963	29·896	29·930	30·067	29·831	86·3	73·7	88·3	69·5	150·4	80·0	18·8	70·3	68·6	·743	·700	·722	67·8	59·9	63·9	12·6	1·38	19
September ..	29·941	29·878	29·910	30·005	29·773	84·8	73·8	86·7	70·6	153·6	80·3	16·1	72·2	71·7	·795	·782	·789	72·2	73·3	72·8	9·4	8·61	20
October ..	29·933	29·850	29·892	30·021	29·774	84·7	73·9	86·5	67·8	152·6	78·9	18·7	70·1	69·7	·735	·728	·732	67·3	66·2	66·8	9·7	4·72	11
November ..	29·911	29·826	29·869	29·991	29·753	83·9	72·3	86·3	67·6	153·4	78·1	18·7	70·4	69·2	·743	·719	·731	71·2	68·4	69·8	9·2	3·42	12
December ..	29·994	29·901	29·948	30·065	29·830	82·9	71·2	84·5	65·6	150·1	77·1	18·9	67·2	66·1	·669	·634	·652	67·4	60·7	64·1	14·4	2·85	12
	359·769	358·871	359·325	360·605	358·071	1011·2	873·4	1036·8	819·7	1813·5	942·6	217·1	821·5	810·6	8·385	8·129	8·260	801·6	755·9	779·2	155·6	40·64	159
	29·981	29·906	29·944	30·050	29·839	84·3	72·8	86·4	68·3	151·1	78·6	18·1	68·5	67·6	·699	·677	·688	66·8	63·0	64·9	13·0		

BARBADOS RAINFALL

FROM

JANUARY TO DECEMBER

1922

BARBADOS RAINFALL FROM

Name of Station.	Elevation.	January.		February.		March.		April.		May.		June.	
	Feet.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.
I. DISTRICT "A"													
ST. MICHAEL.													
Lowlands.													
Haggatt Hall ...	52	12	2·60	17	4·60	7	3·14	7	·87	9	·54	13	4·63
Clapham	216	7	2·09	17	3·60	2	2·44	6	·66	Nil	Nil	6	4·25
Government House	90	13	2·75	22	5·70	13	2·95	8	·95	6	·45	10	5·15
District "A" Police Station ...	97	12	2·38	28	3·51	15	2·63	8	·92	6	·47	11	4·01
Central Police Station	—	12	2·03	20	4·29	9	2·79	7	·85	6	·37	11	4·81
Bush Hall ...	110	14	2·70	28	3·62	9	3·13	5	·82	4	·56	11	4·33
Grazettes ...	...	13	2·00	15	4·12	9	3·15	7	·49	4	·45	12	3·85
Dayrells	...	14	2·30	20	3·49	7	2·63	8	1·43	5	1·02	8	4·24
Waterford	...	12	1·77	20	3·01	8	2·57	5	·63	3	·47	12	4·18
Windsor Cot ...	.	14	2·38	23	4·47	13	2·59	9	·86	9	·41	18	4·43
Warrens	...	10	2·11	16	5·98	6	1·20	5	1·11	2	·91	8	5·10
Neils	...	11	1·90	18	3·66	9	3·62	6	·80	5	·81	10	4·80
Cane Wood ...	...	10	1·60	14	3·99	5	2·29	4	·82	3	·41	8	3·55
Codrington House ...	...	13	2·00	18	3·56	13	3·34	8	·51	4	·60	13	4·40
Penlee	...	11	2·80	19	3·54	10	3·15	7	·62	3	·42	10	5·20
		178	33·11	295	61·14	135	41·62	100	12·67	69	7·89	161	66·91
		11·87	2·23	19·67	4·08	9·00	2·97	6·67	·84	4·60	·53	10·73	4·46
II. DISTRICT "B"													
CHRIST CHURCH.													
Lowlands.													
Woodbourne ...	150	11	1·81	13	2·82	7	3·29	5	·57	3	·30	10	3·27
Seawell	...	10	1·78	15	2·34	10	2·53	6	·53	3	·07	12	3·72
Hannays	...	11	2·30	15	3·88	8	4·11	5	·68	6	·56	10	4·04
Coverley	254	12	2·04	14	3·75	12	2·67	7	·93	3	·18	13	4·06
Searles	283	16	2·85	20	4·66	12	3·56	8	1·02	5	·27	13	4·14
Lower Greys ..	...	11	2·55	15	5·34	8	5·34	5	·50	6	·71	10	3·38
Newton	.	13	2·95	18	4·69	7	4·24	5	1·07	3	·31	12	4·65
Bentley	169	14	1·83	22	1·11	9	3·54	6	·92	4	·64	13	4·34
Isleworth (Hastings)	...	13	1·70	19	2·95	13	3·61	9	·86	6	·46	15	5·10
Frere Pilgrim ...	...	16	3·23	17	1·96	10	4·52	8	1·12	10	·68	13	4·94
Graeme Hall ..	...	12	2·44	18	3·60	10	4·42	6	·59	4	·40	7	5·96
Yorkshire ...	...	10	2·11	17	1·18	8	3·54	3	·69	7	·71	12	4·27
		149	27·59	203	47·58	114	45·37	73	9·48	60	5·29	140	51·81
		12·12	2·25	16·92	3·97	9·50	3·78	6·08	·79	5·00	·41	11·67	4·32

DIX II

JANUARY TO DECEMBER 1922.

July.		August.		September.		October.		November.		December.		Totals.	
Days	Inches.	Days	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.
15	3·26	16	5·62	16	9·81	12	3·71	12	3·44	10	2·05	146	44·27
9	3·13	10	4·87	6	7·74	3	2·32	7	4·72	10	2·23	83	38·05
17	3·60	18	7·03	17	9·90	13	3·50	13	4·45	10	2·75	160	49·18
17	3·11	19	5·75	20	9·80	12	3·75	14	3·64	12	2·31	174	42·28
15	3·06	16	5·15	21	8·77	9	2·48	11	4·19	11	2·24	151	41·53
14	3·03	16	4·83	19	8·99	11	4·18	12	3·53	8	2·22	151	41·94
10	2·49	18	4·05	18	10·08	10	4·35	10	3·91	11	2·29	137	41·23
17	3·57	18	3·58	21	7·81	11	3·63	10	3·74	11	3·72	150	41·16
16	2·98	16	4·62	16	7·46	11	4·21	10	3·16	10	1·79	139	36·85
20	3·38	21	6·82	21	8·26	14	3·94	16	3·71	13	2·59	191	43·84
13	4·74	15	4·92	20	10·92	11	4·58	13	5·99	9	4·36	128	55·25
15	4·07	15	5·07	15	8·43	12	6·27	13	4·95	11	3·03	140	47·41
13	3·18	13	3·18	18	9·66	9	3·72	11	4·69	11	3·80	119	40·87
16	2·75	19	4·38	20	8·61	11	4·72	12	3·42	12	2·35	159	40·64
16	3·26	15	5·50	13	8·43	6	1·93	13	5·54	12	2·05	135	42·44
223	49·61	245	75·67	261	134·67	155	57·19	180	63·08	161	39·78	2163	646·94
14·81	3·31	16·33	5·04	17·40	8·98	10·33	3·83	12·00	4·21	10·73	2·65	144·20	43·13
12	2·71	16	4·18	16	8·81	10	1·69	11	4·28	10	2·50	127	36·59
17	3·20	16	4·18	14	8·09	11	2·48	12	4·90	12	2·91	138	36·73
13	3·24	13	4·59	14	8·26	9	2·03	12	3·87	8	2·62	124	40·15
14	4·67	15	6·25	13	9·96	10	2·86	11	5·58	9	2·88	133	45·83
17	3·81	18	6·30	17	8·33	15	3·18	15	5·07	12	3·13	168	46·32
14	4·06	13	5·19	14	8·43	8	2·66	13	4·45	8	2·85	125	45·46
14	3·70	16	6·66	11	8·59	10	3·49	14	6·40	8	2·90	131	49·65
18	3·75	22	5·12	19	10·25	12	2·55	16	4·22	13	2·58	168	44·05
19	3·45	18	4·37	16	7·92	9	1·97	12	3·03	10	2·00	159	37·42
15	4·39	19	7·71	18	10·57	11	3·18	16	5·22	11	3·39	164	53·91
11	3·63	13	5·42	15	10·24	7	3·10	9	3·49	8	1·65	120	41·91
16	3·53	18	5·50	17	8·19	14	2·52	14	4·44	7	2·91	143	42·89
180	44·17	197	65·77	184	107·67	126	31·71	158	55·15	116	32·32	1700	523·91
15·06	3·68	16·41	5·48	15·33	8·97	10·50	2·61	13·17	4·60	9·67	2·69	141·67	43·66

Name of Station.	Elevation.	January.		February.		March.		April.		May.		June.	
	Feet.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.
ST. GEORGE. *Highlands.*													
Ashbury... ...	...	13	2·90	18	6·23	12	4·05	9	1·95	12	1·32	18	4·83
Cottage	720	12	3·00	23	6·03	15	4·89	14	2·83	11	·87	16	5·40
Woodland ..	...	16	2·27	21	6·19	12	5·17	11	1·72	11	·88	17	4·78
Ellesmere ...	...	12	1·93	22	6·16	13	4·50	15	1·90	9	·76	18	4·83
Golden Ridge ...	...	18	2·79	17	5·11	13	5·00	12	2·60	8	·86	15	5·00
		71	12·89	101	29·72	65	23·61	61	11·00	51	4·67	84	24·84
		11·20	2·58	20·20	5·94	13·00	4·72	12·20	2·20	10·20	·93	16·80	4·97
ST. GEORGE. *Lowlands.*													
Salters	...	11	2·76	18	3·61	7	3·00	6	·85	2	·55	10	4·60
Byde Mill ..	...	12	1·83	23	4·79	14	1·86	10	·78	7	·61	11	4·17
Brighton ...	...	10	2·21	19	5·07	6	3·76	5	·57	5	·73	13	4·95
District "B" Police Station ...	...	21	3·27	23	4·86	18	3·89	7	1·03	10	·83	15	4·62
Frenches ...	...	11	2·09	23	4·52	12	3·56	6	·70	4	·46	16	4·80
		65	12·16	106	22·85	57	19·07	34	3·93	28	3·18	65	23·14
		13·00	2·43	21·20	4·57	11·40	3·81	6·80	·78	5·60	·64	13·00	4·63
III. DISTRICT "C" ST. PHILIP. *Highlands.*													
District "C" Police Station ...	505	15	1·46	21	4·49	9	2·95	8	·89	6	·46	13	3·60
Hill View ...	507	11	1·86	19	4·79	11	4·73	6	1·21	6	·77	11	3·82
Mount Pleasant ...	562	9	1·40	17	4·69	8	2·93	8	1·31	7	·60	11	3·95
		35	1·72	57	13·97	28	10·61	22	3·41	19	1·83	35	11·37
		11·67	1·57	19·00	4·66	9·33	3·53	7·33	1·14	6·33	·61	11·67	3·79
ST. PHILIP. *Lowlands.*													
Fortescue ...	150	12	1·16	17	3·77	7	2·00	10	1·61	8	·70	12	3·67
Thicket	243	10	1·44	19	4·41	5	2 91	6	1·00	3	·59	9	4·27
Bushy Park ...	161	11	1·24	16	3·32	8	2 63	7	·88	6	·53	10	3·24
Oughterson ...	291	11	1·62	14	4·03	8	3·42	4	·87	4	·72	8	3·34
Government Industrial School ...	210	15	1·59	22	3·51	13	3·24	9	·92	7	·57	15	3·52
Sunbury ...	160	13	2·04	18	4·20	8	2·42	7	·97	4	·68	12	4·56
Hampton... ...	103	11	1·89	18	3·31	7	2·83	5	·58	3	·83	3	·83
Carrington ...	110	15	2·19	20	3·79	10	3·19	6	·64	8	·98	13	4·26
Chapel ...	228	15	1·76	23	4·03	13	4·06	8	1·00	6	·50	13	3·91
Edgecumbe ...	207	9	1·37	20	4·08	9	4·06	5	·91	3	·51	13	4·38
Summervale ...	...	17	1 68	22	3·52	16	5·00	10	1·04	7	·45	14	3·26
Palmers ...	...	7	·93	18	4·17	4	2·00	4	1 38	2	·16	8	3·16
Senhouse Grove ...	...	6	1·51	13	3·29	6	1·44	2	·29	3	65	7	3·26
Bayleys ...	128	13	1·37	14	3 69	9	3·04	5	1·19	4	·27	12	4·67
Ruby	...	7	1·25	11	3·54	3	1·70	2	·18	3	·30	8	3·03
		172	23·04	265	56·66	126	41·94	90	13·76	71	8·44	157	53·36
		11·47	1·54	17·67	3·78	8·40	2 80	6·00	·92	4 73	·56	10·47	3·56

JANUARY TO DECEMBER 1922

July.		August.		September.		October.		November.		December.		Totals.	
Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.
20	3.57	19	5·56	21	10·49	12	5·25	14	7·05	13	4·32	181	57·52
19	5·82	20	6·07	20	11·52	15	4·47	17	7·65	13	4·90	195	63·45
22	5·17	28	5·75	23	12·64	14	4·34	19	8·14	12	4·09	206	61·12
21	4·27	22	4·85	23	11·18	20	4·88	8	2·72	13	5·84	196	53·82
15	5·19	19	6·09	22	11·19	10	5·24	20	8·71	12	4·49	181	62·27
97	24·02	108	28·32	109	57·02	71	24·18	78	34·27	63	23·64	959	298·18
19·40	4·80	21·60	5·66	21·80	11·41	14·20	4·84	15·60	6·86	12·60	4·73	191·80	59·64
17	3·87	14	5·06	17	8·33	13	4·97	13	4·63	9	2·86	137	45·09
17	3·87	20	4·79	15	12·94	14	2·67	15	6·26	11	4·14	169	51·71
12	3·38	18	4·98	15	11·08	5	2·74	12	5·09	7	2·90	127	47·46
22	4·36	9	5·80	20	10·04	15	2·86	17	4·98	13	2·96	190	49·50
17	3·53	21	4·23	16	10·37	9	2·91	14	4·47	12	3·32	161	44·96
85	19·01	82	24·86	83	52·76	56	16·15	71	25·43	52	16·18	784	238·72
17·00	3·80	16·40	4·97	16·60	10·55	11·20	3·23	14·20	5·09	10·40	3·24	156·80	47·74
15	2·58	22	4·01	20	11·75	13	2·34	15	5·58	15	2·94	172	43·05
16	4·10	19	4·09	16	12·90	11	5·13	14	5·93	10	3·47	150	52·83
15	3·12	17	4·98	20	13·33	5	1·87	22	6·83	7	3·06	116	48·07
46	9·80	58	13·08	56	37·98	29	9·37	51	18·34	32	9·47	438	143·95
15·33	3·27	19·33	4·36	18·67	12·66	9·67	3·12	17·00	6·11	10·67	3·16	156·00	47·98
15	3·25	18	4·80	18	10·79	7	1·60	12	5·57	10	2·23	146	41·15
11	3·10	15	5·46	15	13·60	7	1·96	13	5·80	9	3·03	122	47·57
15	3·11	16	3·70	12	10·85	6	1·69	14	4·93	9	2·46	130	38·58
14	4·16	19	5·12	16	13·67	12	2·83	15	5·75	11	3·53	136	49·06
23	3·63	25	4·33	19	11·84	15	2·61	17	5·04	13	3·58	193	44·38
17	3·61	19	4·92	18	11·19	14	2·61	15	4·52	14	2·82	159	44·54
14	3·30	14	4·36	17	10·31	10	2·14	13	4·07	10	2·27	125	36·72
19	3·59	19	5·02	22	10·30	14	2·49	16	4·31	10	2·23	172	42·99
20	3·85	20	4·45	18	13·38	13	2·64	18	4·72	12	3·36	179	47·66
15	3·22	16	4·51	14	10·79	9	2·50	17	4·49	10	2·75	140	43·57
20	3·46	22	4·30	20	13·30	13	2·48	14	5·29	9	13·82	184	55·60
16	2·95	16	4·67	15	10·58	8	1·52	13	5·51	9	2·12	120	39·15
9	3·16	9	4·02	13	9·81	5	1·69	11	4·17	7	1·71	91	35·00
16	3·42	22	6·19	15	14·79	10	2·37	15	6·27	11	2·95	146	50·22
10	3·30	12	3·95	11	10·31	6	1·83	13	4·25	6	2·37	92	36·31
234	51·11	262	69·80	243	175·51	149	32·96	216	74·69	150	51·23	2135	652·50
5·60	3·41	17·46	4·65	16·20	11·70	9·93	2·19	14·40	4·98	10·00	3·41	142·33	43·50

Name of Station.	Elevation.	January.		February.		March.		April.		May.		June.	
	Feet.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.
ST. JOHN. *Highlands.*													
Colleton ..	767	15	1·96	17	6·04	8	4·40	5	1·62	7	1·13	12	4·31
Cliff	534	11	2·09	16	5·93	10	4·19	10	1·58	5	·62	13	5·55
Ashford	606	16	1·90	20	7·70	9	4·23	5	2·31	9	1·19	10	5·03
Pool	716	7	2·55	19	7·01	9	4·65	8	2·46	9	1·58	12	5·83
Henley	553	16	2·26	22	6·51	11	4·31	9	1·84	13	·95	17	4·87
Hothersal ...	742	13	2·51	23	6·85	10	3·66	10	2·10	9	·94	12	4·88
Malvern	900	10	2·81	20	6·02	9	3·76	8	2·74	5	·86	8	4·63
Kendal	544	12	2·09	16	5·86	9	4·03	9	2·00	7	·76	14	5·15
Claybury ...	750	9	2·71	15	7·93	6	2·92	10	2·25	9	1·49	12	4·81
Clifton Hall ...	...	11	2·40	15	5·29	7	3·43	11	1·95	9	·72	13	4·62
Lemon Arbor ...	720	11	2·76	20	7·18	9	4·67	9	2·13	7	1·48	10	4·92
Haynes Hill ..	...	13	1·96	8	5·81	12	4·43	7	2·07	5	1·44	13	5·02
		144	28·00	211	78·13	109	48·68	101	25·05	94	13·16	146	59·62
		12·00	2·33	17·58	6·51	9·08	4·05	8·42	2·09	7·83	1·10	12·17	4·97
ST. JOHN. *Lowlands.*													
College	..	11	1·60	13	4·48	6	2·74	7	1·31	5	·84	10	3·52
Newcastle ...	238	16	2·34	20	4·85	10	2·92	10	1·66	9	·48	17	4·47
	...	27	3·94	33	9·33	16	5·66	17	2·97	14	1·32	27	7·99
	..	13·50	1·97	16·50	4·67	8·00	2·83	8·50	1·49	7·00	·66	13·50	3·99
IV. DISTRICT "D."													
ST. THOMAS. *Highlands.*													
Mount Wilton ...	987	9	3·45	27	6·18	13	2·98	9	1·49	17	5·85	16	5·85
Lion castle ..	900	12	2·87	25	5·62	15	3·03	10	2·40	11	·88	19	5·42
District " D " Police Station ...	678	17	3·44	14	5·92	19	3·36	13	2·27	16	·94	17	5·00
Farmers ..	903	13	3·57	20	4·71	11	2·71	8	1·51	5	·66	16	4·96
Canefield ..	1,024	15	3·96	23	6·81	13	3·57	10	1·95	11	1·34	14	6·58
Bloomsbury ..	...	14	3·89	25	7·33	16	4·02	12	2·58	14	1·35	19	4·96
Vaucluse ...	...	10	2·38	22	5·86	9	4·04	7	1·02	4	·52	12	4·96
Highland .	...	17	3·69	25	6·85	17	3·06	13	2·85	13	1·21	17	5·42
		107	27·25	181	49·28	113	26·77	82	16·97	91	12·75	130	43·15
		13·37	3·42	22·62	6·16	14·12	3·35	10·25	2·12	11·37	1·59	16·25	5·39

JANUARY TO DECEMBER 1922.

July.		August.		September.		October.		November.		December.		Totals.	
Days.	Inches.	Days	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.
19	4·07	18	7·30	19	11·57	9	2·21	15	6·64	12	3·11	156	54·35
15	4·68	15	5·68	15	13·38	8	3·53	16	7·76	8	4·15	142	59·14
14	5·45	18	6·91	15	13·05	6	2·94	14	7·21	9	3·44	145	61·36
17	5·98	20	8·51	18	11·73	15	3·18	17	9·20	13	4·88	164	67·56
22	5·08	27	6·13	22	12·17	12	4·60	19	8·21	11	4·45	201	61·38
17	4·96	23	7·94	19	12·04	14	2·46	19	8·96	10	4·03	179	61·33
12	5·02	13	6·38	18	8·75	8	5·18	11	8·82	12	3·60	134	58·57
17	4·61	24	6·05	20	12·27	16	3·56	19	7·08	10	4·19	173	57·65
17	5·91	14	8·57	17	14·13	5	4·35	15	10·43	9	4·36	138	69·86
15	4·47	21	6·56	18	11·62	12	2·04	16	8·09	10	4·03	158	55·22
20	6·14	22	8·13	17	15·08	11	6·37	13	9·70	13	5·00	162	73·56
9	4·68	9	8·34	15	12·90	12	2·19	14	7·70	7	2·47	124	59·01
194	61·05	224	86·50	213	148·69	128	42·60	188	99·80	124	47·71	1876	738·99
16·17	5·09	18·67	7·21	17·75	12·39	10·66	3·55	15·67	8·32	10·33	3·97	156·33	61·58
13	3·36	16	5·78	17	12·44	5	1·50	11	5·94	7	1·99	121	45·50
20	3·76	23	6·43	22	11·91	14	2·02	16	8·62	12	2·74	189	52·20
33	7·12	39	12·21	39	24·35	19	3·52	27	14·56	19	4·73	310	97·70
16·50	3·56	19·50	6·10	19·50	12·17	9·50	1·76	13·50	7·28	9·50	2·37	155·00	48·85
18	6·14	24	8·28	22	17·64	11	4·42	18	13·75	12	4·77	196	80·80
21	5·78	22	6·81	20	15·76	20	4·71	20	11·82	12	3·99	207	69·09
20	5·61	8	5·87	20	13·45	16	4·08	20	10·68	13	3·66	193	64·28
14	4·86	21	5·86	20	15·38	9	3·65	17	11·71	10	2·74	164	62·32
17	6·85	23	7·68	19	17·34	13	4·19	21	13.50	11	5·66	190	79·43
20	5·73	26	6·50	23	17·49	17	4·76	20	14·71	13	3·84	219	77·16
15	4·17	18	5·83	17	10·73	9	3·82	16	10·11	11	3·61	150	57·95
20	6·07	26	6·63	23	18·24	16	4·19	19	13·38	14	4·64	220	76·23
145	45·21	168	53·46	164	126·03	111	33·82	151	99·66	96	32·91	1539	567·26
18·12	5·65	21·00	6·68	20·50	15·75	13·88	4·23	18·89	12·45	12·00	4·11	192·37	70·90

Name of Station.	Elevation.	January.		February.		March.		April.		May.		June.	
	Feet.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.
ST. THOMAS. *Lowlands.*													
Hopewell ..	534	16	2·86	26	6·55	20	4·96	15	2·02	15	1·33	20	4·80
Welches ..	398	13	2·23	20	5·69	10	3·59	6	·99	7	·62	10	4·46
Bennetts ..	350	12	2·90	22	5·68	14	3·52	10	2·10	7	·55	12	4·62
Bagatelle ..		8	2·49	13	4·51	5	3·27	5	1·23	2	·15	7	3·83
Strong Hope ..	590	9	3·19	11	6·18	6	4·95	4	1·99	5	1·25	11	5·31
Cane Garden ..	350	14	2·03	19	5·47	10	3·49	7	1·15	6	·77	13	4·09
Applewhaites .		13	2·52	22	5·60	13	4·72	12	1·78	11	1·06	15	5·41
		85	18·22	133	39·68	78	28·50	59	11·26	53	5·73	88	32·43
		12·14	2·60	19·00	5·67	11·14	4·07	8·43	1·61	7·57	·82	12·57	4·63
ST. JAMES. *Highlands.*													
Apes Hill		12	3·15	17	5·40	10	2·95	7	1·70	6	1·15	12	5·45
		12·00	3·15	17·00	5·40	10·00	2·95	7·00	1·70	6·00	1·15	12·00	5·45
ST. JAMES. *Lowlands.*													
H'town Police Station ...		14	2.42	25	4·81	18	3·71	12	1·81	8	·34	17	1·55
Trents	.	17	2·94	21	4·44	13	2·86	5	1·42	4	·57	13	4·88
Westmoreland ..		11	1·08	17	5·47	11	3·96	6	2·05	5	·71	12	6·28
Lancaster .	413	15	4·21	23	5·95	14	3·17	9	2·00	5	·86	18	5·70
Norwood ...	...	10	2·59	11	4·74	8	3·31	7	2·34	2	·37	12	1·84
Husbands ..	...	10	1.35	18	2·71	11	3·91	8	·66	3	·35	9	3·41
Oxnards	...	13	1·22	19	3·07	12	3·43	8	·66	4	·37	11	3·47
		90	17·91	137	31·19	87	24·35	55	10·94	31	3·57	92	33·13
		12·86	2·56	19·57	4·45	12·43	3·48	7·86	1·56	4·43	·51	13·14	4·73
V. DISTRICT "E"													
ST. PETER. *Highlands.*													
Nicholas Abbey ...	821	10	2·41	21	4·44	9	2·08	7	1·23	4	·60	12	6·84
Oxford	836	15	2·15	19	3·78	11	1·88	11	1·71	8	·53	17	6·83
Orange Hill ..	...	11	2·32	18	4·77	6	1·71	1	·40	4	·91	13	6·63
Mangrove .	..	13	1·82	20	3·59	12	2·17	9	1·75	8	1·33	14	5·31
Castle ..	700	14	2·33	19	3·62	14	2·49	8	1·59	9	·62	11	6·05
Ebworth	...	13	3·69	17	3·22	13	2·09	10	1·39	9	·86	13	6·84
Rock Hall ..	...	12	1·96	19	4·27	14	2·72	11	1·95	9	1·35	14	6·70
Portland ...	...	11	2·77	22	4·27	17	2·31	11	1·55	9	·95	16	6·47
		102	19·48	155	31·96	96	17·45	68	11·57	60	7·15	110	51·67
		12·75	2·44	19·37	3·99	12·00	2·18	8·50	1·45	7·50	·89	13·75	6·46

JANUARY TO DECEMBER 1922

July.		August.		September.		October.		November.		December.		Totals.	
Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.
23	5·15	28	7·35	25	12·52	21	3·88	20	10·51	16	4·93	245	66·86
14	3·88	18	4·34	18	10·43	10	4·42	14	6·65	9	3·73	149	51·03
14	3·99	19	5·59	19	11·15	11	3·05	16	9·34	12	4·85	168	57·34
11	2·81	12	3·50	12	8·10	9	3·23	10	6·48	8	3·46	102	43·06
12	5·30	20	7·60	20	12·84	9	3·89	15	11·31	10	5·08	132	68·89
15	3·53	17	4·32	20	11·04	10	4·18	15	6·41	9	4·14	155	50·53
21	5·01	27	6·15	22	9·48	17	5·19	18	7·71	14	4·97	205	59·60
110	29·67	141	38·85	136	75·56	87	27·81	108	58·41	78	31·16	1156	397·31
15·72	4·24	20·14	5·55	19·43	10·80	12·43	3·98	15·43	8·34	11·14	4·45	165·14	56·76
16	5·68	18	6·15	18	12·70	12	3·70	18	13·25	10	3·18	156	64·46
16·00	5·68	18·00	6·15	18·00	12 70	12·00	3·70	18·00	13·25	10·00	3·18	156·00	64·46
17	3·70	20	3·84	22	10·57	13	2·90	17	10·19	14	3·02	197	51·86
13	3·30	17	3·98	18	11·32	7	2·68	14	11·07	9	2·69	151	51·25
17	5·39	19	5 62	18	13·89	6	2·36	18	15·26	8	3·39	149	68·46
16	5·56	22	5·99	21	14·48	15	2·92	20	14·52	10	5·00	188	70·36
14	3·35	14	4·42	18	10·26	7	2·84	13	7 92	7	2·95	126	49·93
13	3·07	16	3·91	16	9·13	8	2·85	11	4·73	10	2·99	133	39·07
18	2·37	17	3·64	19	8·67	10	3·06	13	4·16	13	2·61	157	36·73
108	26·74	125	31·40	132	78·32	66	19·61	106	67·85	72	22·65	1101	367·66
15·43	3·82	17·86	4·48	18·86	11·19	9·43	2·80	15·14	9·69	10·28	3·24	157·29	52·52
11	3·32	19	5·10	17	13·63	9	2·35	13	8·63	8	3·47	140	54·13
19	4·67	18	4·25	19	11·79	15	2·43	14	8·54	13	4·05	179	52·61
16	5·24	17	4·39	24	16·03	10	3·42	20	13·35	12	4·00	152	63·17
15	4·25	17	3·95	19	11·88	12	3·65	19	10·34	13	3·84	171	53·88
16	4·17	13	4·11	19	12·28	10	2·56	14	8·47	12	3·99	159	52 28
17	5·41	19	5·38	22	14·17	13	2·82	17	9·99	15	5·76	178	61·62
18	5·63	17	4·54	19	11·98	10	4·51	18	12·55	12	4·92	173	63·08
15	4·90	21	5·57	23	17·27	11	2·92	16	11·16	15	4·83	190	64·97
127	37·59	141	37·29	162	109·03	90	24·66	131	83·03	100	34·86	13·42	465·74
15·88	4·70	17·63	4·66	20·25	13·63	11·25	3·08	16·37	10·38	12·50	4·36	167·75	58·22

Name of Station.	Elevation.	January.		February.		March.		April.		May.		June.	
	Feet.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.
ST. PETER. *Lowlands.*													
District "E" Police Station ...	...	12	2·70	22	3·64	15	1·99	9	1·10	8	·81	16	6·60
Ashton Hall ...	...	9	2·54	10	3·37	5	1·80	3	·96	2	·36	9	6·02
Heywoods ...	50	8	2·22	15	3·21	11	2·29	5	·85	5	·62	11	5·94
The Rectory ...	...	12	2·22	17	3·32	8	1·85	9	1·20	5	·75	13	6·27
	...												
		41	9·68	64	13·54	39	7·93	26	4·11	20	2·54	49	24·83
		10·25	2·42	16·00	3·39	9·75	1·98	6·50	1·03	5.00	·64	12·25	6·21
ST. LUCY. *Lowlands.*													
Lamberts ...	350	11	1·45	20	2·81	11	2·01	8	1·39	5	·33	13	4·22
Mount Gay ...	.	12	1·81	16	2·96	10	2·07	10	1·68	6	·37	14	7·01
Pickerings ...	71	11	1·69	16	2·52	7	1·58	6	1·41	7	·62	16	5·87
Husbands ...	184	9	1·56	19	2·51	13	1 66	10	1·11	10	·49	16	6·45
Friendship ...	...	8	1·65	10	2·02	5	1·51	7	·92	3	·14	13	6·04
Cove ...	...	4	·98	6	2·00	2	1·38	4	1·00	2	·37	10	2·93
		55	9·14	87	14·82	48	10·21	45	7·51	33	2·62	82	12·52
		9·17	1·52	14·50	2·47	8·00	1·70	7·50	1·25	5·50	·44	13·67	5·42
VI. DISTRICT "F." ST JOSEPH. *Highlands.*													
Blackmans ...	910	13	2·73	24	6·19	13	2·84	8	2·12	12	1·25	15	4·60
Andrews ...	780	8	2·73	16	6·47	9	3·85	8	2·09	9	1·28	14	4·89
District "F" Police Station ...	966	12	2·24	9	3·99	14	3·20	10	1·60	7	·34	14	5·37
		33	7·69	49	16·65	36	9·89	26	6·11	28	2·87	43	14·86
		11·00	2·56	16·33	5·55	12·00	3·30	8·67	2·04	9·33	·96	14·33	4·95
ST. JOSEPH. *Lowlands.*													
Freizers ...	...	13	2·86	22	5·98	14	4·45	10	1·63	10	·79	15	5·85
		13·00	2·86	22·00	5·98	14·00	4·45	10·00	1·63	10·00	·79	15·00	5·85
ST. ANDREW. *Highlands.*													
Cleland ...	...	10	1·79	14	3·32	7	2·04	7	1·32	5	1·12	11	7·50
		10·00	1·79	14·00	3·32	7·00	2·04	7·00	1·32	5·00	1·12	11·00	7·50
ST. ANDREW. *Lowlands.*													
Greenland ...	...	11	1·50	19	2·88	18	2·06	9	1·10	3	·83	16	6·09
Baxter's House ..	...	11	1·60	14	2·92	13	2·24	8	1·16	4	·53	11	5·70
Walkers ..	...	13	1·41	15	2·66	7	2·22	10	1·35	2	·15	14	5·91
		35	4·51	48	8·46	38	6·52	27	3·61	9	1·51	41	17·70
		11·66	1·50	16·00	2·82	12·67	2·18	9·00	1·20	3·00	·50	13·67	5·90

July.		August.		September.		October.		November.		December.		Totals.	
Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.
19	4·92	15	4·14	20	12·37	11	3·33	18	9·63	12	4·50	177	55·73
11	4·46	10	4·35	17	13·67	4	3·01	15	9·42	6	2·04	101	52·00
15	5·30	13	3·76	17	11·27	8	3·12	16	9·04	11	3·98	135	51·60
14	4·14	13	3·69	19	13·66	8	3·54	19	10·32	12	4·53	149	55·49
59	18·82	51	15·94	73	50·97	31	13·00	68	38·41	41	15·05	562	214·82
14·75	4·71	12·75	3·98	18·25	12·74	7·75	3·25	17·00	9·60	10·25	3·76	140·50	53·71
16	4·08	12	4·04	20	8·65	12	2·40	14	6·40	11	3·18	153	40·86
14	4·55	16	4·30	21	10·65	10	2·45	13	8·37	10	4·38	152	50·60
17	4·08	15	4·18	20	9·21	10	2·04	15	7·19	12	4·39	152	44·78
21	4·43	18	3·30	20	9·06	14	1·89	16	7·78	16	4·23	182	44·47
13	4·83	9	3·94	31	9·29	6	2·16	10	7·86	8	4·25	105	44·91
8	3·45	10	3·54	8	7·50	3	1·25	8	4·37	6	2·85	71	31·62
89	25·42	80	23·30	102	54·36	55	12·19	76	41·97	63	23·18	815	257·24
14·83	4·24	13·33	3·88	17·00	9·06	9·17	2·03	12·67	7·00	10·50	3·86	135·83	42·87
19	5·42	27	6·94	21	13·23	15	4·64	18	11·98	13	3·99	198	66·23
23	5·09	25	7·61	21	14·65	11	4·82	15	11·62	13	4·70	172	69·79
20	4·87	21	5·68	23	13·45	12	3·35	20	17·03	12	4·36	174	65·48
62	15·38	73	20·23	65	41·33	38	12·81	53	40·63	38	13·05	544	201·50
20·67	5·13	24·33	6·74	21·67	13·78	12·67	4·27	17·67	13·54	12·66	4·35	181·33	67·17
14	4·76	20	7·03	20	12·09	7	1·72	16	13·95	10	3·38	171	64·49
14·00	4·76	20·00	7·03	20·00	12·09	7·00	1·72	16·00	13·95	10·00	3·38	171·00	64·49
15	5·16	12	4·35	17	14·76	8	2·35	16	10·96	9	3·83	131	58·50
15·00	5·16	12·00	4·35	17·00	14·76	8·00	2·35	16·00	10·96	9·00	3·83	131·00	58·50
15	4·56	14	4·42	16	15·46	10	2·01	16	9·09	10	2·99	157	52·99
16	3·63	14	4·05	20	11·61	10	2·81	15	12·55	11	2·96	147	51·76
19	3·84	16	3·83	17	13·09	10	2·06	18	8·09	13	3·22	154	47·83
50	12·03	44	12·30	53	40·16	30	6·88	49	29·73	34	9·17	458	152·58
6·66	4·01	14·66	4·10	17·67	13·39	10·00	2·29	16·34	9·91	11·33	3·06	152·66	50·86

SUMMARY OF BARBADOS RAINFALL

Name of Station.	No. of Stations.	January.		February.		March.		April.		May.		June.	
		Days.	Inches.	Days.	Inches.	Days.	Inches	Days.	Inches.	Days.	Inches	Days.	Inches.
I. DISTRICT "A."													
ST. MICHAEL.													
Lowlands ..	15	11·87	2·23	19·67	4·08	9·00	2·97	6·67	·84	4·60	·53	10·73	4·46
II. DISTRICT "B."													
(a) CHRIST CHURCH.													
Lowlands ..	13	12·12	2·30	16·92	3·97	9·50	3·78	6·08	·79	5·00	·44	11·67	4·32
(b) ST. GEORGE.													
Highlands ..	5	14·20	2·58	20·20	5·94	13·00	4·72	12·20	2 20	10·20	·93	16 80	4·97
(b) ST. GEORGE.													
Lowlands .	5	13·00	2·43	21·20	4·57	11·40	3·81	6·80	·78	5·60	·64	13·00	4·63
III. DISTRICT "C."													
(a) ST. PHILIP.													
Highlands .	3	11·67	1·57	19·00	4·66	9·33	3·53	7·33	1·14	6·33	·61	11·67	3·79
(a) ST. PHILIP.													
Lowlands ..	15	11·47	1·54	17·67	3·78	8·40	2·80	6·00	·92	4·73	·56	10·47	3·56
(b) ST. JOHN.													
Highlands ...	12	12·00	2·33	17·58	6·51	9·08	4 05	8·42	2·09	7 83	1 10	12·17	4·97
(b) ST. JOHN.													
Lowlands ..	2	13·50	1·97	16·50	4·67	8·00	2·83	8·50	1·49	7·00	·66	13·50	3·99
IV. DISTRICT "D."													
(a) ST. THOMAS.													
Highlands ..	8	13·37	3·42	22·62	6·16	14·12	3·35	10 25	2·12	11·37	1 59	16·25	5 39
(a) ST. THOMAS.													
Lowlands ..	7	12·14	2·60	19·00	5·67	11·14	4·07	8·43	1·61	7·57	·82	12·57	4·63
(b) ST. JAMES.													
Highlands ..	1	12·00	3·15	17·00	5·40	10·00	2·95	7·00	1·70	6·00	1·15	12·00	5·45
(b) ST. JAMES.													
Lowlands ..	7	12·86	2·56	19·57	4·45	12·43	3·48	7·86	1·56	4·43	·51	13·14	4·73
V. DISTRICT "E."													
(a) ST. PETER.													
Highlands ..	8	12·75	2·44	19·37	3·99	12·00	2·18	8·50	1·45	7·50	·89	13·75	6·46
(a) ST. PETER.													
Lowlands ...	4	10·25	2·42	16·00	3·39	9·75	1·98	6·50	1·03	5·00	·64	12·25	6·21
(b) ST. LUCY.													
Lowlands ...	6	9·17	1·52	14·50	2·47	8 00	1·70	7·50	1·25	5·50	·44	13·67	5·42
VI. DISTRICT "F."													
(a) ST. JOSEPH.													
Highlands ..	3	11·00	2 56	16·33	5·55	12·00	3·30	8·67	2·04	9·33	·96	14·33	4·95
(a) ST. JOSEPH.													
Lowlands ...	1	13·00	2·86	22·00	5·98	14·00	4·45	10·00	1·63	10·00	·79	15·00	5·85
(b) ST. ANDREW.													
Highlands ...	1	10·00	1·79	14·00	3·32	7·00	2·04	7·00	1·32	5·00	1·12	11·00	7·50
(b) ST ANDREW.													
Lowlands ...	3	11·66	1·50	16·00	2·82	12·67	2·18	9·00	1·20	3·00	·50	13·67	5·90
	119	228.33	43·77	345·13	87·38	200·82	60 17	152·71	27·16	125·99	14·88	247·64	97·18
		12·02	2·30	18·16	4·60	10·57	3·17	8·04	1·43	6·63	·78	13·03	5·11

FROM JANUARY TO DECEMBER 1922

July.		August		September.		October.		November.		December.		Totals.	
Days	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches.	Days.	Inches	Days.	Inches.	Days.	Inches.
14·81	3·31	16·33	5·04	17·40	8·98	10·33	3·83	12·00	4·21	10·73	2·65	144·20	43·13
15·00	3·68	16·41	5·48	15·33	8·97	10·50	2·64	13·17	4·60	9·67	2·69	141·67	43·66
19·40	4·80	21·60	5·66	21·80	11·41	14·20	4·84	15·60	6·86	12·60	4·73	191·80	59·64
17·00	3·80	16·40	4·97	16·60	10·55	11·20	3·23	14·20	5·09	10·40	3·24	156·80	47·74
15·33	3·27	19·33	4·36	18·67	12·66	9·67	3·12	17·00	6·11	10·67	3·16	156·00	47·98
15·60	3·41	17·46	4·65	16·20	11·70	9·93	2·19	14·40	4·98	10·00	3·41	142·33	43·50
16·17	5·09	18·67	7·21	17·75	12·39	10·66	3·55	15·67	8·32	10·33	3·97	156·33	61·58
16·50	3·56	19·50	6·10	19·50	12·17	9·50	1·76	13·50	7·28	9·50	2·37	155·00	48·85
18·12	5·65	21·00	6·68	20·50	15·75	13·88	4·23	18·89	12·45	12·00	4·11	192·37	70·90
15·72	4·24	20·14	5·55	19·43	10·80	12·43	3·98	15·43	8·34	11·14	4·45	165·14	56·76
16·00	5·68	18·00	6·15	18·00	12·70	12·00	3·70	18·00	12·25	10·00	3·18	156·00	64·46
15·43	3·82	17·86	4·48	18·86	11·19	9·43	2·80	15·14	9·69	10·28	3·24	157·29	52·52
15·88	4·70	17·63	4·66	20·25	13·63	11·25	3·08	16·37	10·38	12·50	4·36	167·75	58·22
14·75	4·71	12·75	3·98	18·25	12·74	7·75	3·25	17·00	9·60	10·25	3·76	140·50	53·71
14·83	4·24	13·33	3·88	17·00	9·06	9·17	2·03	12·67	7·00	10·50	3·86	135·83	42·87
20·67	5·13	24·33	6·74	21·67	13·78	12·67	4·27	17·67	13·54	12·66	4·35	181·33	67·17
14·00	4·76	20·00	7·03	20·00	12·09	7·00	1·72	16·00	13·95	10·00	3·38	171·00	64·49
15·00	5·16	12·00	4·35	17·00	14·76	8·00	2·35	16·00	10·96	9·00	3·83	131·00	58·50
16·66	4·01	14·66	4·10	17·67	13·39	10·00	2·29	16·34	9·91	11·33	3·06	152·66	50·86
306·87	83·02	337·40	101·07	351·88	228·72	199·57	58·86	295·05	166·52	203·56	67·80	2995·00	1036·54
16·15	4·37	17·76	5·32	18·52	12·04	10·50	3·10	15·53	8·76	10·71	3·57	157·63	54·55